Ministerial Stability During Presidential Approval Crises

The Moderating Effect of Ministers' Attributes on Dismissals in Brazil and Chile

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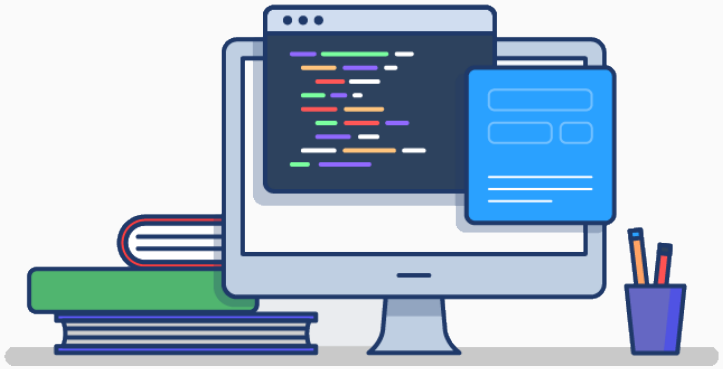


Introduction

Introduction

In this sense, this paper constitutes a contribution as it offers an empirically approachable conceptualisation of ministerial profiles linked to strategies in contexts of low presidential approval crisis. Thus, our main question is: **How can a minister's attributes prevent his or her exit from the cabinet during periods of low presidential approval?**

We will refer to two country-specific cases: Brazil and Chile.

- Both are cases of multiparty coalitions, though Chile has shown remarkably stable ones.
- Both have shown a higher degree of technical control over economic policies compared to other cases of the region.
- Both have periods of low presidential approval (at different points) and comparable levels of ministerial survival in the medium to long term.

Theory

Approval Assumption

Our central assumption of this paper is the **distinction between approval and the rest of the events** that the literature usually recognises as shocks. We consider that periods of low approval are a consequence of failed strategies and inadequate responses to other stochastic events.

The **president should have incentives to correct drops in presidential approval** by generating changes in his or her cabinet and firing inefficient ministers or those who do not meet the appropriate profile that matches strategic presidential decisions, in a similar fashion to what happens with prime ministers in parliamentary systems (Dewan and Dowding, 2005; McAllister, 2003).

Empirical Expectations

Our empirical expectations are, on the one hand, that presidents do indeed carry out reshuffles during periods of low approval in order to achieve a corrective effect on approval and, on the other hand, that specific ministers' profiles and attributes can moderate the presidential decision to dismiss.

Hypothesis 1 (H_1). Exposure to periods of low presidential approval increases the likelihood that a minister is removed from the cabinet.

This moderation occurs because specific profiles are linked to identifiable presidential strategies. Therefore, we are particularly interested in testing the protective effect that three traits linked to specific strategies may offer.

Empirical Expectations

First, the appointment of nonpartisan ministers may operate as a presidential strategy to control loss of agency and moral hazard (Chaisty et al., 2018; Martínez-Gallardo and Schleiter, 2015).

Hypothesis 2 (H_2). Nonpartisan ministers are less likely to be removed from the cabinet during periods of low presidential approval.

Empirical Expectations

Second, we evaluated technical knowledge as a desirable trait to deal with difficult moments. We are interested in the role played by economists given the abundant literature on the influence of the technocratic phenomenon in Latin America (Centeno and Silva, 1998; Silva, 2011, see also Camerlo and Martínez-Gallardo, 2018).

Hypothesis 3 (H_3). Economist ministers are less likely to be removed from the cabinet during periods of low presidential approval.

The argument is that more technical cabinets allow the president to obtain good results in implementing public policies and send signals to the electorate to maintain or regain popularity.

Empirical Expectations

Third, leadership in political parties is a variable that could also offer protection as it denotes the ability of ministers to mobilise support and affect the negotiation environment (president's legislative strategy). Ministerial appointments of party leaders could be used as a strategy to negotiate legislative support (Schleiter, 2020).

Hypothesis 4 (H_4). Party leaders ministers are less likely to be removed from the cabinet during periods of low presidential approval.

Empirical Strategy

Time-Dependent Data Encoding

We ellaborate a merged data set of ministers from Brazil and Chile using data on cabinets between 1990 and 2014 from Franz and Codato (2016) and González-Bustamante and Olivares (2018).

We thereby obtain a set of **488 observations** that we encode as a **time-dependent data set** with quarterly cut-off points for the whole period in order to incorporate presidential approval and macroeconomic data as time-varying covariates.

The base is encoded with cases that have multiple observations, in this case *i-th* ministers, according to defined time intervals corresponding to specific events: the four quarters of each year. The variance of the **time-varying covariates is coded over the closed interval**, that is, at the end of each quarter.

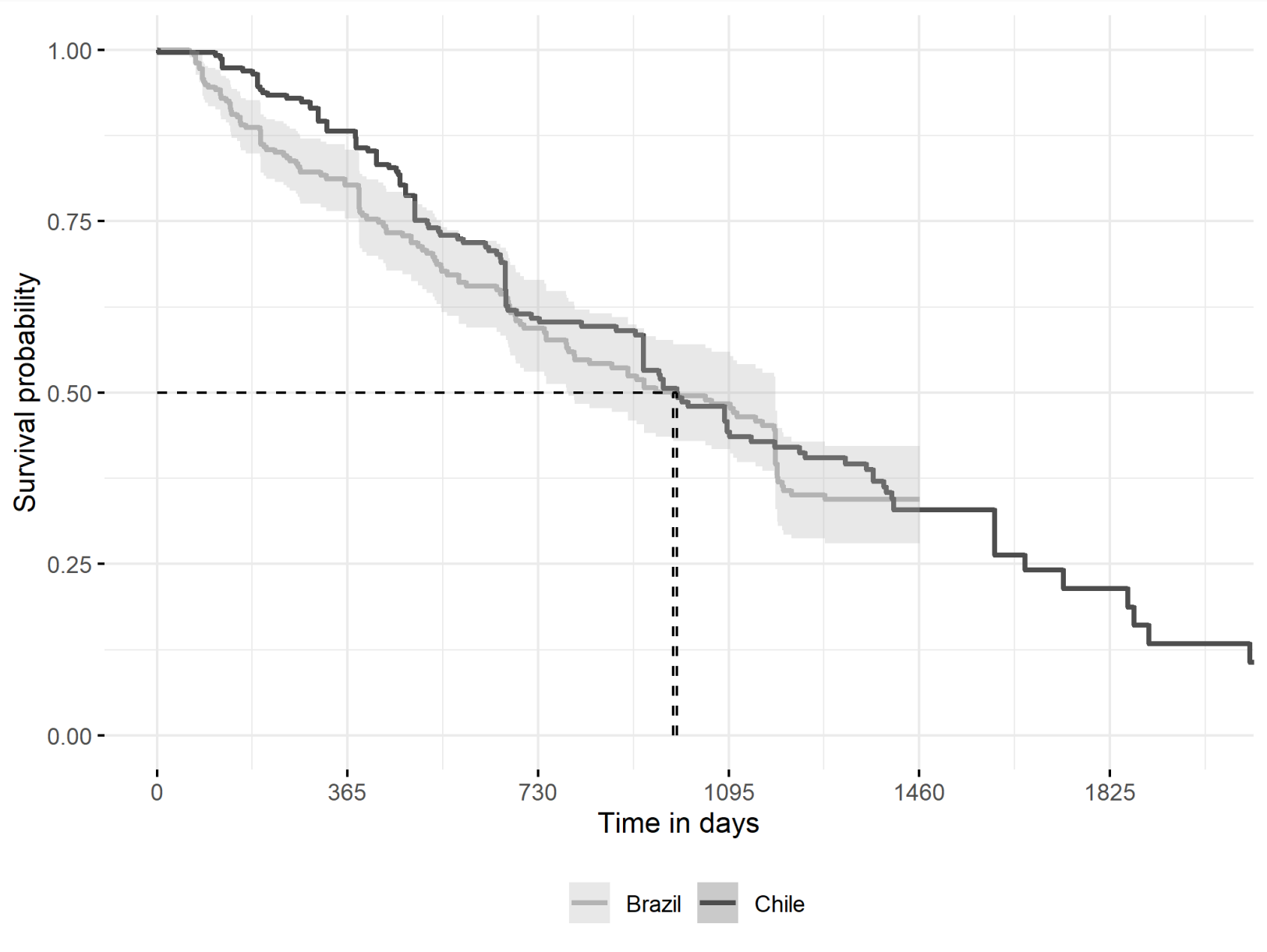
Time-Dependent Data Encoding

The last interval of each case ends with the departure of the cabinet minister Y_i (except in censored cases). We merge in each interval $Z(t)$ quarterly smoothed presidential approval with data from Carlin et al. (2019).

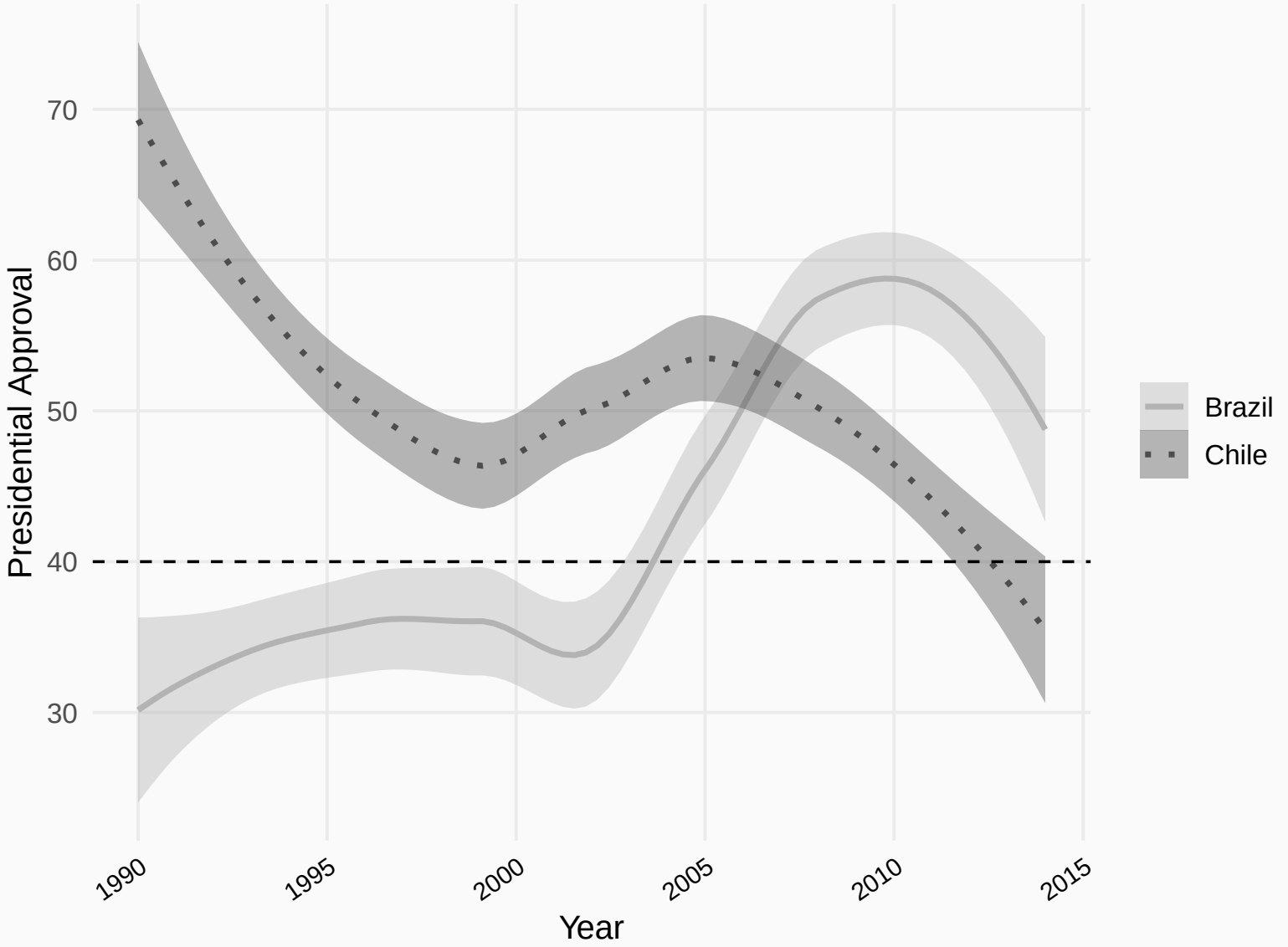
In addition, we merge to the data set World Bank macroeconomic indicators (2020; see also Piburn, 2020) (GDP growth and inflation) and the legislative effective number of parties (ENP) with the Gallagher and Mitchell (2005) indicator updated for the period between 1990 and 2014.

This allows us to obtain a set with **4,245 observations** to which we apply administrative censoring in the final interval when it coincides with the end of the constitutional presidential term.

Kaplan-Meier Survival Estimations for Ministers



Presidential Approval



Time-Varying Exposure Cox Regressions

For econometric estimation with observational data, we use an extension of Cox models that involves **non-proportional hazards** due to the set's structure. The equation incorporates the effect of the $Z(t)$ intervals of the multiple *i-th* observations, considering them as clusters. First, we estimate a model with our quarterly exposure variable to **low presidential approval** D_i **(below 40 points)**. We control for government and country **fixed effects** and include a vector of controls C_k with *k-th* **potential confounders** (these are subsequently used to estimate propensity scores).

$$\lambda(t_i) = \lambda_0(t_i)\, exp\,[\beta_t Z_i(t) + \beta D_i + \zeta\, gov_i + \eta\, country_i + \sum_{k=1}^{K} \vartheta_k C_{k[i]} + \varepsilon_i] \quad (1)$$

Time-Varying Exposure Cox Regressions

Next, we incorporate the **interaction effect** between low presidential approval D_i and **moderating covariates** $X_{j[i]}$, denoting *j-th* type covariates that are incorporated in **separate models**. Our strategy involves testing three binary moderation effects related to profiles and attributes of ministers: (i) nonpartisan ministers; (ii) economists; and (iii) party leaders.

$$\lambda(t_i) = \lambda_0(t_i)\, exp\,[\beta_t Z_i(t) + \beta D_i + \gamma_j X_{j[i]} + \delta_j D_i \times X_{j[i]} + \zeta\, gov_i + \eta\, country_i + \sum_{k=1}^{K} \vartheta_k C_{k[i]} + \varepsilon_i] \quad (2)$$

Time-Varying Exposure Cox Regressions

The vector C_k ($K = 9$) considers the following variables: **legislative ENP**, a binary variable reflecting when consecutive **presidential re-election** is allowed, **economic growth**, **inflation**, and five binary variables measuring the quadratic patterns of the **cyclical model of presidential approval** (initial honeymoon, a gradual deterioration, and a slight recovery towards the end of the term, see Carlin et al., 2018; Stimson, 1976).

These nine covariates are considered **potential confounders for the PS estimation** as they could affect both presidential approval and the decision to fire ministers.

- Further discussion of the causal mechanisms of these variables can be found in the full paper.

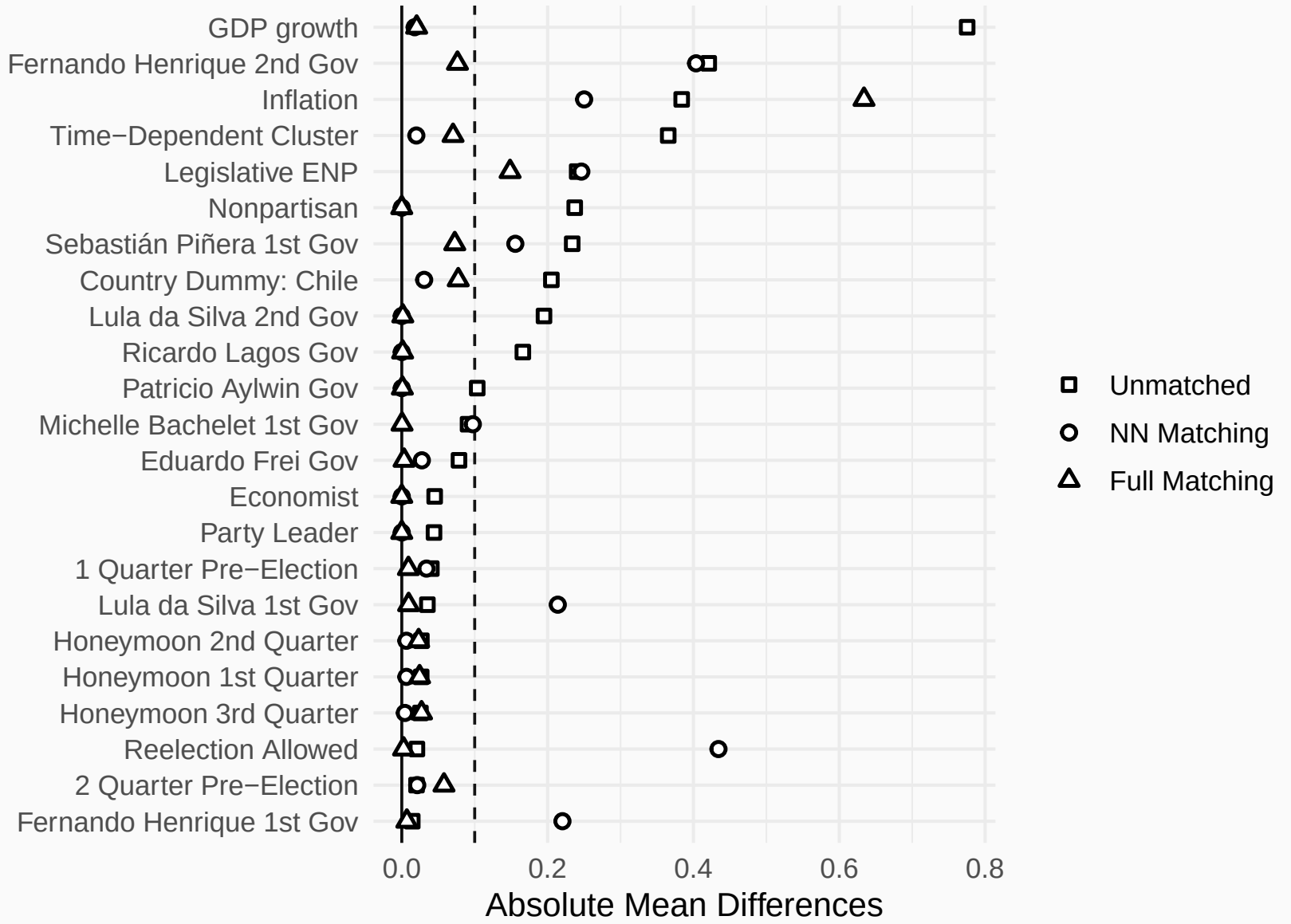
Propensity Score Analysis and Matching

To control for the non-random selection problem and bias, we employ PS and matching with a **logistic regression of periods of low presidential approval** D_i with the moderating covariates $X_{j[i]}$, government and country fixed effects, and the potential confounders C_k.

$$D_i = \alpha \ + \gamma_1 X_{1[i]} + \gamma_2 X_{2[i]} + \gamma_3 X_{3[i]} + \zeta\, gov_i + \eta\, country_i + \sum_{k=1}^{K} \vartheta_k C_{k[i]} + \varepsilon_i \tag{3}$$

Then, we classify *i-th* observations into different PS balanced groups with the **nearest neighbour algorithm** without replacement to match observations with and without exposure to low approval D_i. We also use **full matching** to obtain samples with lower average PS across pairs, avoiding discarding observations (Hansen, 2004; Olmos and Govindasamy, 2015).

Std and Abs Mean Differences Before and After Matching



Matching and Moderation Analysis

Covariate balance and matching suggests the choice of the sample with full matching where only legislative ENP and inflation fail to balance. Consequently, we integrate these variables as controls in the outcome models (Austin et al., 2007; Olmos and Govindasamy, 2015).

In addition, we **incorporate the weights obtained with the matching process** and adjust for the *s-th* clusters of the matching to test the effect of exposure to low presidential approval on the individual ministerial terminations.

$$\lambda(t_i) = \lambda_0(t_i)\ exp\left[\beta_t w_i Z_i(t) + \beta w_i D_i + \mu\, w_i ENP_i + \xi, w_i inflation_i + \epsilon_{i[s]}\right] \quad (4)$$

Matching and Moderation Analysis

Subsequently, we include **interaction terms** between low approval D_i with our moderation factors $X_{j[i]}$ in **separate models** to perform the moderation analysis.

$$\lambda(t_i) = \lambda_0(t_i)\ exp\,[\beta_t w_i Z_{i(t)} + \beta w_i D_i + \gamma_j w_i X_{j[i]} + \delta_j w_i D_i \times X_{j[i]} + \mu\, w_i ENP_i + \xi\, w_i inflation_i + \epsilon_{i[s]}] \quad (5)$$

Results

Effect of Low Approval on the Dismissal of Ministers

	Model I	Model II
Low Approval ($< 40\%$)	0.705^{***}	0.857^{***}
	(0.231)	(0.194)
Matching	Before	Full
Sub. Clustering	No	Yes
Moderation Covariates	Yes	PS
Legislative ENP	Yes	PS/Yes
Re-Election Allowed	Yes	PS
GDP	Yes	PS
Inflation	Yes	PS/Yes
Quadratic Approval Pattern	Yes	PS
Government FE	Yes	PS
Country FE	Yes	PS
Obs. Clustering	Yes	PS
Log-Rank	113.624^{***}	22.129^{***}
AIC	2696.23	1551.612
C-Index	0.672	0.58
VIF	1.084	3.441
Events	256	256
N	4245	4245
Log Likelihood	-1328.115	-772.806

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

By exponentiating β coefficients, we obtain the hazard ratio, and it can be observed that the matching allowed for a bias correction of 16.5%: $e^{\beta} = 2.357$ ($p = 0.001$ and CI 95%: 1.398 to 3.973). This implies an increased risk of individual ministerial termination of 135.7% during periods of low approval.

With this result, we accept H_1.

Moderation Analysis of Exposure to Low Approval

	Time-Varying Cox Regressions			Survival Outcome Models		
	Model I	Model II	Model III	Model IV	Model V	Model VI
Low Approval (< 40%)	0.877*** (0.240)	0.736*** (0.238)	0.619** (0.258)	1.389*** (0.232)	0.939*** (0.211)	0.674* (0.233)
Nonpartisan	−0.240 (0.215)			0.476 (0.261)		
Economist		−0.049 (0.207)			0.208 (0.301)	
Party Leader			0.241 (0.168)			−0.009 (0.262)
Low Approval x Nonpartisan	−0.771** (0.328)			−1.516** (0.362)		
Low Approval x Economist		−0.192 (0.336)			−0.392 (0.400)	
Low Approval x Party Leader			0.186 (0.272)			0.504 (0.339)
Matching	Before	Before	Before	Full	Full	Full
Sub. Clustering	No	No	No	Yes	Yes	Yes
Legislative ENP	Yes	Yes	Yes	PS/Yes	PS/Yes	PS/Yes
Re-Election Allowed	Yes	Yes	Yes	PS	PS	PS
GDP	Yes	Yes	Yes	PS	PS	PS
Inflation	Yes	Yes	Yes	PS/Yes	PS/Yes	PS/Yes
Quadratic Approval Pattern	Yes	Yes	Yes	PS	PS	PS
Government FE	Yes	Yes	Yes	PS	PS	PS
Country FE	Yes	Yes	Yes	PS	PS	PS
Obs. Clustering	Yes	Yes	Yes	PS	PS	PS
Log-Rank	125.147***	98.495***	105.73***	49.198***	23.145***	29.188***
AIC	2690.52	2708.627	2703.748	1532.641	1554.651	1550.508
C-Index	0.683	0.663	0.668	0.657	0.607	0.623
VIF	1.081	1.082	1.078	3.452	3.467	3.444
Events	256	256	256	256	256	256
N	4245	4245	4245	4245	4245	4245
Log Likelihood	−1326.260	−1335.313	−1332.874	−761.321	−772.325	−770.254

$^{\star}\ p < 0.1$; $^{\star\star}\ p < 0.05$; $^{\star\star\star}\ p < 0.01$

Moderation Analysis of Exposure to Low Approval

The only profile that generates protection during periods of low approval is that of nonpartisan ministers (before and after matching).

Model IV corrects the bias of model I by 52.5%: $e^{\beta} = 0.220$ ($p = 0.017$ and CI 95%: 0.063 to 0.761). This evidence suggests that just over one-fifth of nonpartisan ministers are removed from the cabinet in periods of low approval compared to partisan ministers.

This allows us to accept H_2 and reject H_3 and H_4 since the likelihood of being removed from the cabinet during periods of low presidential approval does not decrease for economist ministers or party leaders.

Robustness Checks

As a robustness test, we use a stricter definition of the technical profile than just considering economists. We use a combination with partisan leadership, which the literature usually defines as a political technocrat or technopol. **This alternative profile is not significant**.

Moreover, we **add as controls and confounders** the sex and age of ministers. In our main models, these variables are not considered because although they might affect the minister's performance (and likelihood of remaining in the cabinet), they are unlikely to affect presidential approval.

These additional analyses show the same patterns of our primary analysis with a slightly more pronounced moderation effect on nonpartisan ministers, **reconfirming H_2**: $e^{\beta} = 0.166$ ($p = 0.006$ and CI 95%: 0.047 to 0.594).

- Further details can be found in the full paper.

Placebo Test

Finally, to ensure the plausibility of our identification strategy, we conduct a placebo test with the treatment altered $\widetilde{D}_i$ in the propensity score and matching analysis.

The **altered measure** involves considering periods where **presidential approval exceeds the 60% threshold**, so the expectation is that neither the placebo nor its interactions with moderating covariates are significant.

Indeed, there are also **no significant relationships in the two-way interactions** between $\widetilde{D}_i$ and the moderation covariates $X_{j[i]}$. This allows us to reaffirm the plausibility of our primary analyses.

- Further details can be found in the full paper.

Discussion

Discussion

Our main findings allow us to test the hypothesis that the likelihood of ministerial removal increases during periods of low approval. **Indeed, the risk doubles compared to normal periods, increasing by 135.7%**.

On the other hand, we also test our hypothesis that **nonpartisan ministers are more protected during these periods**: only one in five nonpartisan ministers is removed from the cabinet in an approval crisis compared to partisan ministers.

Discussion

Our results were obtained from the matched sample, therefore, we have controlled for imbalances and the absence of counterfactuals. It is relevant to note that the **matching allowed a 16.5% and 52.5% adjustment** for the main effect and the moderation effect, respectively. Our robustness and placebo tests confirm our findings.

On the other hand, hypotheses related to the protection of economist ministers and party leaders have been rejected. This does not necessarily mean that these are not relevant profiles and attributes but rather implies that presidents prefer to **limit moral hazard during periods of low approval**.

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Thank you very much!